NAME OF WORK:- RESTORATION OF ROAD CUT PORTION DONE BY BWSSB, BESCOM, GAIL,KPTCL AND OTHER AGENCIES "ON BACK TO BACK ROAD RESTORATION BASIS" IN BRUHAT BENGALURU MAHANAGARA PALIKE LIMITS IN YELAHANKA ZONE.

(Restoration of UGD Road cut Portion Done by BWSSB on back to back road restoration basis at Akashavani Layout, Aswathnagara, Munikempanna Layout, Sadiq Layout in Ward no 6 Byatarayanapura sub division)

(Quality Control Reports)

Format No: CP/TF/01

TEST REPORT OF FINE AGGREGATE

Lab ID	:	**CP-2019-07-01-04** **Date: 15-03-19**
Project Name	:	Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.
Name of Work	:	Restoration of Water Supply Road cut Portion Done by BWSSB on back to back road restoration basis at Akashavani Layout, Ashwathnagara, Munikempanna Layout, Sadiq Layout in Ward no 6 Byatarayanapura sub division
Agency	:	R Satheesh (Sathya Constructions), #600, Down Bazaar Road, Yelahanka, Bangalore-560064
Customer's Reference	:	EE/TEC/WO/12/2018-19
Date of Receipt	:	13-03-19
Sample Type	:	Fine Aggregate(M Sand)
Reference to BIS codes	:	IS 383 : 2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test	:	13-03-19
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	28	28	2.8	97.2	90-100	90-100	90-100	95-100
3	2.36 mm	54	82	8.2	91.8	60-95	75-100	85-100	95-100
4	1.18 mm	227	309	30.9	69.1	30-70	55-90	75-100	90-100
5	600 micron	201	510	51.0	49.0	15-34	35-59	60-79	80-100
6	300 micron	200	710	71.0	29.0	5-20	8-30	12-40	15-50
7	150 micron	199	909	90.9	9.1	0-10	0-10	0-10	0-15
8	Pan	91	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2019-07-01-04** **Date: 15-03-19**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.53	–
2	Specific Gravity	2.55	–
3	Material finer than 75 micron(%)	6.7	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

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Authorized Signatory
Quality Manager

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TEST RESULTS OF GRADATION FOR WMM

Lab ID : **CP-RW-2019-07-01-04** **Date: 25-03-19**

Project Name : Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.

Name of Work : Restoration of Water Supply Road cut Portion Done by BWSSB on back to back road restoration basis at Akashavani Layout, Ashwathnagara, Munikempanna Layout, Sadiq Layout in Ward no 6 Byatarayanapura sub division

Agency : R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064

Customer Reference : EE/TEC/WO/12/2018-19

Date of Receipt : 23-03-19

Type of Mix : WMM (Wet Mix Macadam)

Date of test : 23-03-19

Oven Dry Weight : 11000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	310	310	2.8	97.2	95-100
22.4	2256	2566	23.3	76.7	60-80
11.2	2178	4744	43.1	56.9	40-60
4.75	2259	7003	63.7	36.3	25-40
2.36	1625	8628	78.4	21.6	15-30
0.6	638	9266	84.2	15.8	8-22
0.075	1340	10606	96.4	3.6	0-5

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Quality Manager

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2019-07-01-04** **Date: 25-03-19**
Project Name	:	Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.
Name of Work	:	Restoration of Water Supply Road cut Portion Done by BWSSB on back to back road restoration basis at Akashavani Layout, Ashwathnagara, Munikempanna Layout, Sadiq Layout in Ward no 6 Byatarayanapura sub division
Agency	:	R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064
Customer Reference	:	EE/TEC/WO/12/2018-19
Date of Receipt	:	23-03-19
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	23-03-19

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	300.4	300.4
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	73.7	74.3
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	225.9	225.8
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.8	0.3
5	Aggregate impact value	(B/A)*100	24.5	24.7
6	Aggregate impact value (Mean of two tests)	Pecentage	24.6	

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID : **CP-RW-2019-07-01-04** **Date: 25-03-19**

Project Name : Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.

Name of Work : Restoration of Water Supply Road cut Portion Done by BWSSB on back to back road restoration basis at Akashavani Layout, Ashwathnagara, Munikempanna Layout, Sadiq Layout in Ward no 6 Byatarayanapura sub division

Agency : R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064

Customer Reference : EE/TEC/WO/12/2018-19

Date of Receipt : 23-03-19

Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)

Date of test : 23-03-19

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	12.6%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.4%	
Combined Flakiness and Elongation Index for WMM	25.0%	

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TEST REPORT ON BITUMEN

Lab ID	:	**CP-RW-2019-07-01-04**	**Date: 01-04-19**
Project Name	:	Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.	
Name of Work	:	Restoration of Water Supply Road cut Portion Done by BWSSB on back to back road restoration basis at Akashavani Layout, Ashwathnagara, Munikempanna Layout, Sadiq Layout in Ward no 6 Byatarayanapura sub division	
Agency	:	R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064	
Customer's Reference	:	EE/TEC/WO/12/2018-19	
Date of Receipt	:	30-03-19	
Sample Type	:	Bitumen	
Reference to BIS codes	:	IS: 1201-1220(1978) (Reaffirmed-2004)	
Date of test	:	30-03-19	

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	**62**	60 to 70
2	Softening Point, °C	**51.6**	Min. 40°C
3	Ductility, cm	**97**	Min. 75cm
4	Flash point, °C	**242**	Min. 220°C
	Fire point, °C	**276**	

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Quality Manager

****End of Report****

TEST RESULTS OF GRADATION FOR OPEN GRADED PREMIX CARPET

Lab ID : **CP-RW-2019-07-01-04** **Date: 08-04-19**

Project Name : Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.

Name of Work : Restoration of Water Supply Road cut Portion Done by BWSSB on back to back road restoration basis at Akashavani Layout, Ashwathnagara, Munikempanna Layout, Sadiq Layout in Ward no 6 Byatarayanapura sub division

Agency : R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064

Customer Reference : EE/TEC/WO/12/2018-19

Date of Receipt : 05-04-19

Type of Mix : Open Graded Premix Carpet

Date of test : 05-04-19

Weight of Sample : 5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
22.4	0	0	0.0	100.0	100
13.2	0	0	0.0	100.0	100
9.5	418	418	8.4	91.6	90-100
4.75	2177	2595	51.9	48.1	35-51
2.36	1027	3622	72.4	27.6	24-39
1.18	512	4134	82.7	17.3	15-30
0.3	378	4512	90.2	9.8	9-19
0.075	156	4668	93.4	6.6	3-8
PAN	332	5000	100.0	0.0	0

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Authorized Signatory
Quality Manager

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PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR PREMIX CARPET

Lab ID : **CP-RW-2019-07-01-04** **Date: 10-04-19**

Project Name : Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.

Name of Work : Restoration of Water Supply Road cut Portion Done by BWSSB on back to back road restoration basis at Akashavani Layout, Ashwathnagara, Munikempanna Layout, Sadiq Layout in Ward no 6 Byatarayanapura sub division

Agency : R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064

Customer Reference : EE/TEC/WO/12/2018-19

Date of Receipt : 05-04-19

Type of Mix : Open Graded Premix Carpet

Date of test : 05-04-19

Physical Requirements fo Coarse Aggregate for Premix Carpet

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	11.7	Combined Flakiness & Elongation Index for DBM is Maximum 35%	IS:2386 Part I
	Elongation Index	9.3		
Strength	Aggregate Impact Value	21.3	Maximum 30%	IS:2386 Part IV
Specific gravity	Specific gravity	2.54	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	0.31	Maximum 2%	IS:2386 Part III

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End of Report

TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2019-07-01-04** **Date: 10-04-19**
Project Name	:	Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.
Name of Work	:	Restoration of Water Supply Road cut Portion Done by BWSSB on back to back road restoration basis at Akashavani Layout, Ashwathnagara, Munikempanna Layout, Sadiq Layout in Ward no 6 Byatarayanapura sub division
Agency	:	R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064
Customer Reference	:	EE/TEC/WO/12/2018-19
Date of Receipt	:	05-04-19
Type of Mix	:	Open Graded Premix Carpet
Date of test	:	05-04-19

Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.0	2.0	98.3	Minimum Retained Coating 95%
2	99.0	1.0		
3	98.0	2.0		

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Quality Manager

****End of Report****

TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2019-07-01-04** **Date: 10-04-19**
Project Name	:	Restoration of Road Cut Portion done By BWSSB,BESCOM,GAIL,KPTCL and other Agencies "On Back to Back Road Restoration Basis" in Bruhat Bengaluru Mahanagara Palike Limits in Yelahanka Zone.
Name of Work	:	Restoration of Water Supply Road cut Portion Done by BWSSB on back to back road restoration basis at Akashavani Layout, Ashwathnagara, Munikempanna Layout, Sadiq Layout in Ward no 6 Byatarayanapura sub division
Agency	:	R Satheesh (Sathya Constructions), #600, Down Bazaar Road,Yelahanka,Bangalore-560064
Customer Reference	:	EE/TEC/WO/12/2018-19
Date of Receipt	:	05-04-19
Type of Mix	:	Open Graded Premix Carpet
Date of test	:	05-04-19

The results of the tests conducted on the Premix Carpet sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-16
1	Marshal Stability at 60°C, KN	10.58	10.54	8.2KN(min)
2	Marshal flow at 60°C, mm	3.22	3.28	2-4
3	Percent air Voids	4.5	4.26	3-5
4	Percent Voids in mineral Aggregate(VMA %)	13.81	13.5	13-15
5	Percent Voids filled with Bitumen(VFB %)	70.2	69.5	65-75
6	Density, g/cc	2.22	2.26	–

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